PIONEER
The Art of Entertainment

Service Manual

ORDER NO.
ARP2314

FM/AM DIGITAL SYNTHESIZER TUNER

F-P710L HE2, HB2

F-P710 HEWZI2

• Refer to the service manuals ARP2166, F-P710L/HE, HB and ARP2199, F-P710/HEWZIW.

- **This manual is applicable to the F-P710L/HE2, HB2 and F-P710/HEWZI2 types.**
- **F-P710L/HE2, HB2 and F-P710/HEWZI2 are the same model as F-P710L/HE, HB and F-P710/HEWZIW with a different PACKING.**
  Please refer to the service manual for F-P710L/HE, HB (ARP2166) and F-P710/HEWZIW (ARP2199), for other items than the PACKING.

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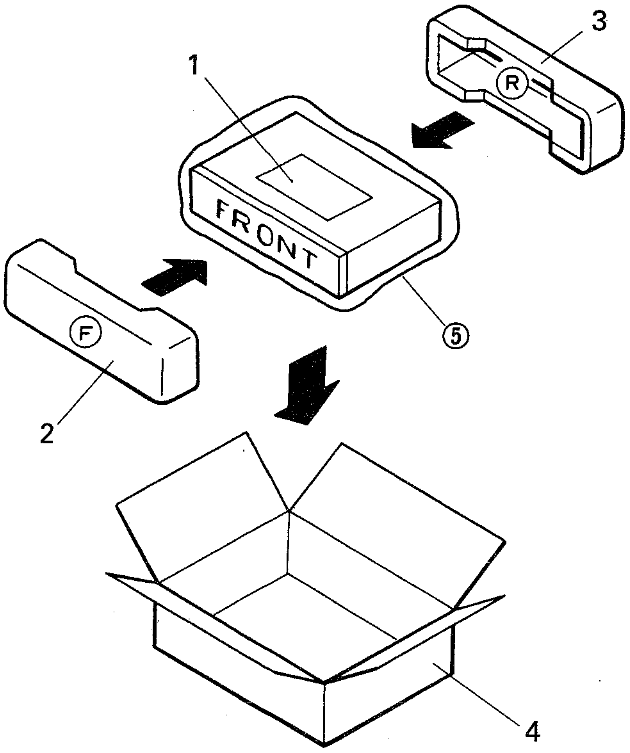
FV JULY 1991 Printed in Japan

PACKING

NOTES:
- *Parts without part number cannot be supplied.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*



PARTS LIST

Mark	No.	Description	Parts No.
	1.	Sub operating instructions	ARH1047
	2.	Front pad	AHA1323
	3.	Rear pad	AHA1324
	4.	Packing case	AHD2161
	4.	Packing case (F-P710/HEWZIW2 only)	AHD2162
	5.	Packing sheet	AHG1176

NOTE: The operating instructions is contained in the A-P710 and A-P510 packing.
Please refer to the service manuals of A-P710/HE2, HB2 and HEWZIWZ as well as A-P510/HE2, HB2 and HEZIWZ (ARP2310).

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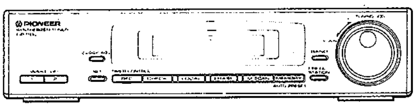
Service Manual



ORDER NO.
ARP2166

FM/AM DIGITAL SYNTHESIZER TUNER
F-P710L

MODEL F-P710L AND F-P710 HAVE THE FOLLOWING :

Type	Model		Power Requirement	Remarks
	F-P710L	F-P710		
HE	○	—	AC220V, 240V (switchable)*	
HB	○	—	AC220V, 240V (switchable)*	
HEWZI	—	○	AC220V, 240V (switchable)*	
KUC	—	○	AC120V only	
SD	—	○	AC110V, 120V-127V, 220V, 240V(switchable)	

* Change the primary wiring of power transformer(s).

- **This manual is applicable to F-P710L/HE and HB types.**
- **As to HB type, refer to page 25.**
- **As to the other types, refer to applicable service manual.**
- **F-P710L covers MW/LW bands while F-P710 covers MW.**
- **These products are components of systems. As to the system composition, refer to the system manuals.**
- **Each of these products does not function properly when independent ; to avoid malfunctions, be sure to connect it to the prescribed system component(s), otherwise damage may result.**

- **Ce manuel pour le service comprend les explications de réglage en français.**
- **Este manual de servicio trata del método ajuste escrito en español.**

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1. SPECIFICATIONS

FM Tuner Section

Reception frequency range .... 87.5–108.0 MHz
Usable Sensitivity .... MONO: 12.8 dBf, IHF
(1.2 μV/75 ohms)
Sensitivity (DIN) .. MONO S/N 26 dBf (1 μV/75 ohms)
STEREO S/N 46 dBf (50 μV/75 ohms)
Signal-to-Noise Ratio
(IHF, 85 dBf Input) .... MONO: 77 dB
Signal-to-Noise Ratio (DIN) .... MONO: 66 dB
STEREO: 60 dB
Distortion .... STEREO: 0.5%, 1 kHz
Antenna input .... 75 ohms unbalanced

AM (MW) Tuner Section

Frequency range (For European and multi-voltage models)
.... 531 kHz to 1,602 kHz
(For U.S., Canadian and
multi-voltage models) .... 530 kHz to 1,700 kHz
Sensitivity (IHF, Loop antenna) .... 350 μV/m
Antenna .... Loop Antenna

LW Tuner Section
(For LW equipped models only)

Frequency range .... 153 kHz to 281 kHz
Sensitivity (IHF, Loop Antenna) .... 1,500 μV/m
Antenna .... Loop Antenna

Other

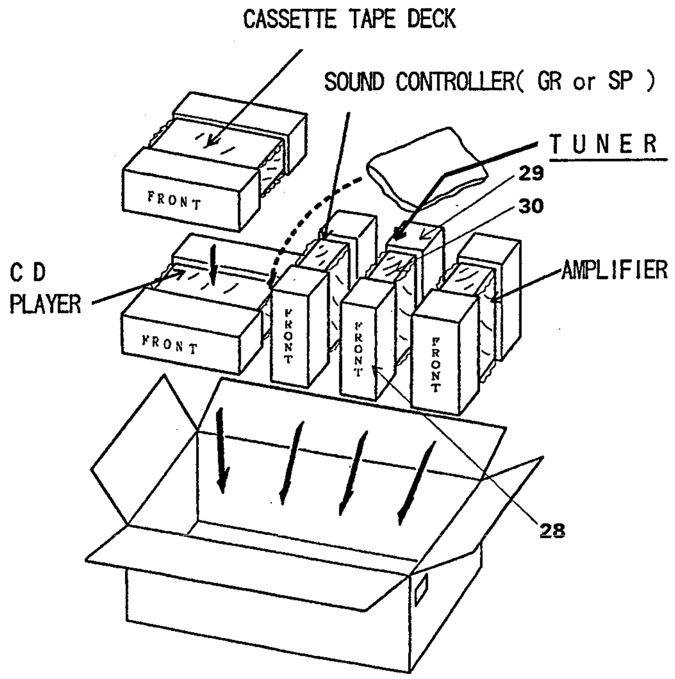
Power requirements
European models .... AC 220 V, 50/60 Hz
U.K., models .... AC 240 V, 50/60 Hz
U.S., Canadian models .... AC 120 V, 60 Hz
Multi-voltage models .... AC 110/120–127/
220/240 V (switchable), 50/60 Hz
Power consumption .... 11 W
Dimensions .... 260 (W) × 58.5 (H) × 256.5 (D) mm
10-3/16 (W) × 2-1/4 (H) × 10-1/16 (D) in
Weight (without package) .... 1.9 kg (4 lb 3 oz.)

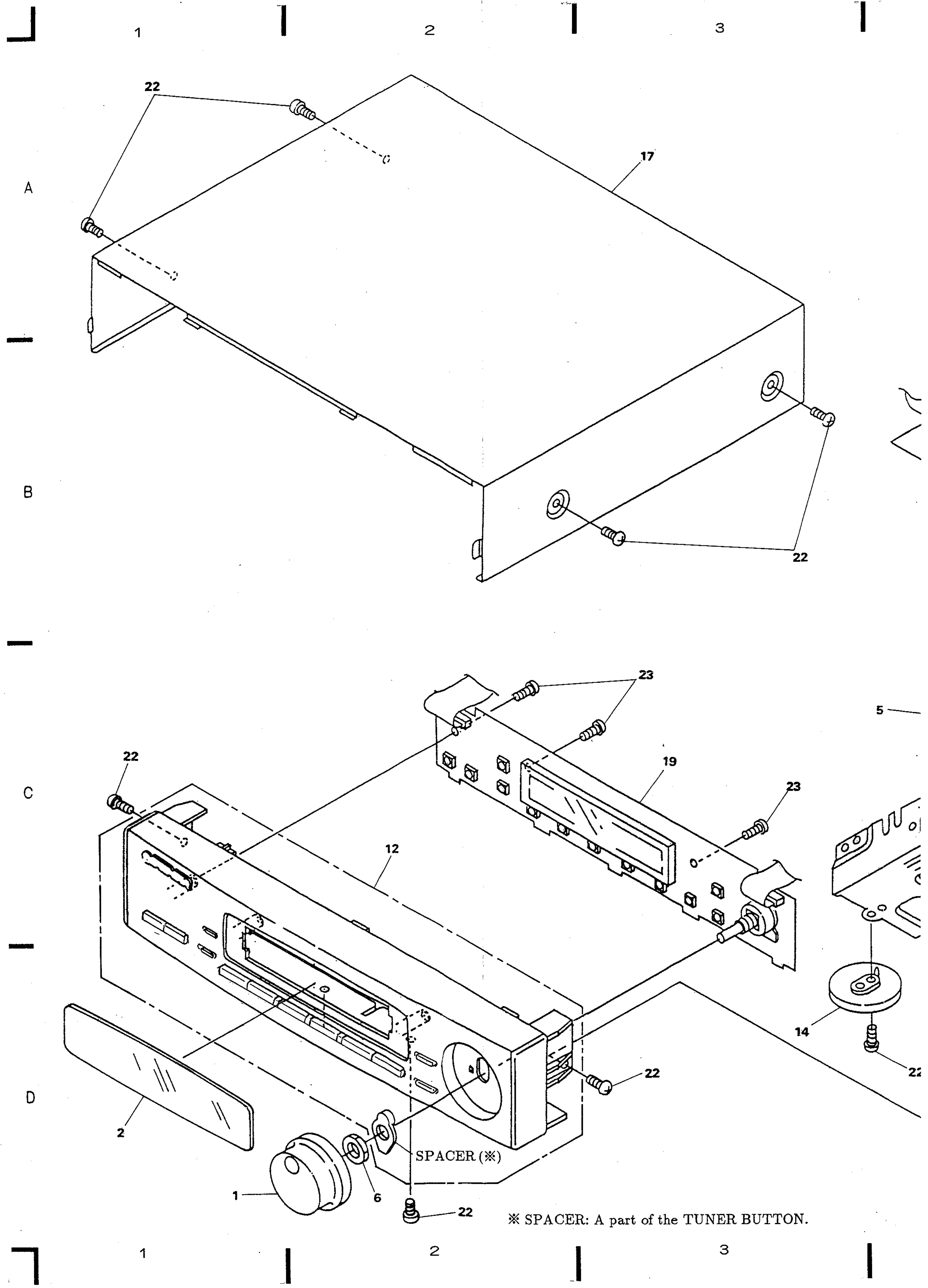
2. EXPLODED VIEWS, PACKING AND PARTS LIST

NOTES :

- *Parts without part number cannot be supplied.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*

Mark	No.	Description	Part No.
	1	TUNING KNOB	AAB1183
	2	PLATE(PVC)	AAK2011
	3	SCREW	ABA1024
	4	SCREW	ABA-115
	5	WASHER	ABE-053
	6	NUT	ABN1016
⚠	7	AC POWER CORD(HB type)	ADG1067
⚠	7	AC POWER CORD(HE type)	ADG1068
	8	INSULATER	AEB1131
	9	SPACER	
	10	STRAIN RELIEF	AEC-882
⚠	11	FU1 FUSE(T400MA)(HB type)	AEK-504
⚠	11	FU1 FUSE(T400MA)(HE type)	AEK-407
	12	FRONT PANEL ASSY	AMB1787
	13	PCB MOULD	
	14	INSULATOR ASSY	AMR2148
	15	CHASSIS	
	16	REAR PANEL	
	17	BONNET(FE)	ANE1259
◉	18	MAIN ASSEMBLY(HB type)	AWZ3412
◉	18	MAIN ASSEMBLY(HE type)	AWZ3413
◉	19	DISPLAY ASSEMBLY	AWZ3411
	20	TR. ASSEMBLY	
	21	SCREW	BBZ30P060FMC
	22	SCREW	BBZ30P080FZK
	23	SCREW	BPZ26P080FMC
	24	C5 CERAMIC CAPACITOR	CCDSL101J50
	25	FOOT (RUBBER)	REC-434
	26	SCREW	BBZ30P080FMC
	27	BARRIER	AMR2280
	28	FRONT PAD	AHA1323
	29	REAR PAD	AHA1324
	30	PACKING SHEET	AHG1176





※ SPACER: A part of the TUNER BUTTON.

R or SP)

TUNER

-AMPLIFIER

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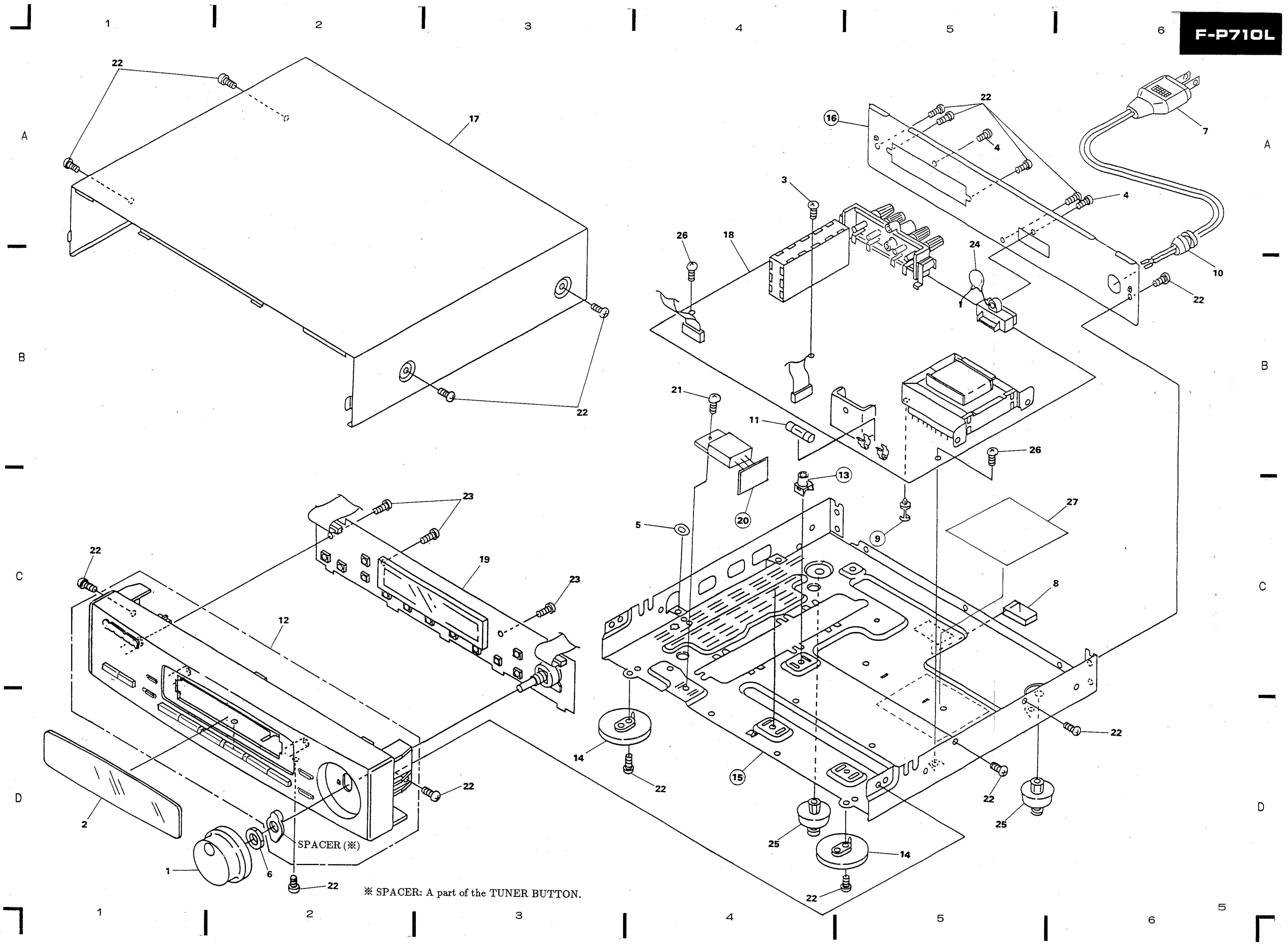


※ SPACER: A part of the TUNER BUTTON.

3

5

3. SCHEMATIC DIAGRAMS AND PCB CONNECTION DIAGRAM

3. 1 MAIN ASSEMBLY (AWZ3413) (1/2)

1.RESISTORS :

Indicated in Ω, 1/4W, 1/6W and 1/8W, ±5% tolerance unless otherwise noted k ; kΩ, M ; MΩ, (F) ; ±1%, (G) ; ±2%, (K) ; ±10%, (M) ; ±20% tolerance.

2.CAPACITORS :

Indicated in capacity (μF)/voltage(V) unless otherwise noted p ; pF. Indeication without voltage is 50V except electrolytic capacitor.

3.VOLTAGE, CURRENT :

☐ ; DC voltage (V) at no input signal.
Value in ( ) is DC voltage at rated power.
⇦mA ; DC current at no input signal.
mV ; Signal voltage at FM 400Hz±75Hz DEV.

4.OTHERS :

➡ ; Signal route.
⊘ ; Adjusting point

The ⚠ mark found on some component parts indicates the inportance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

※ marked capacitors and resistors have parts numbers.

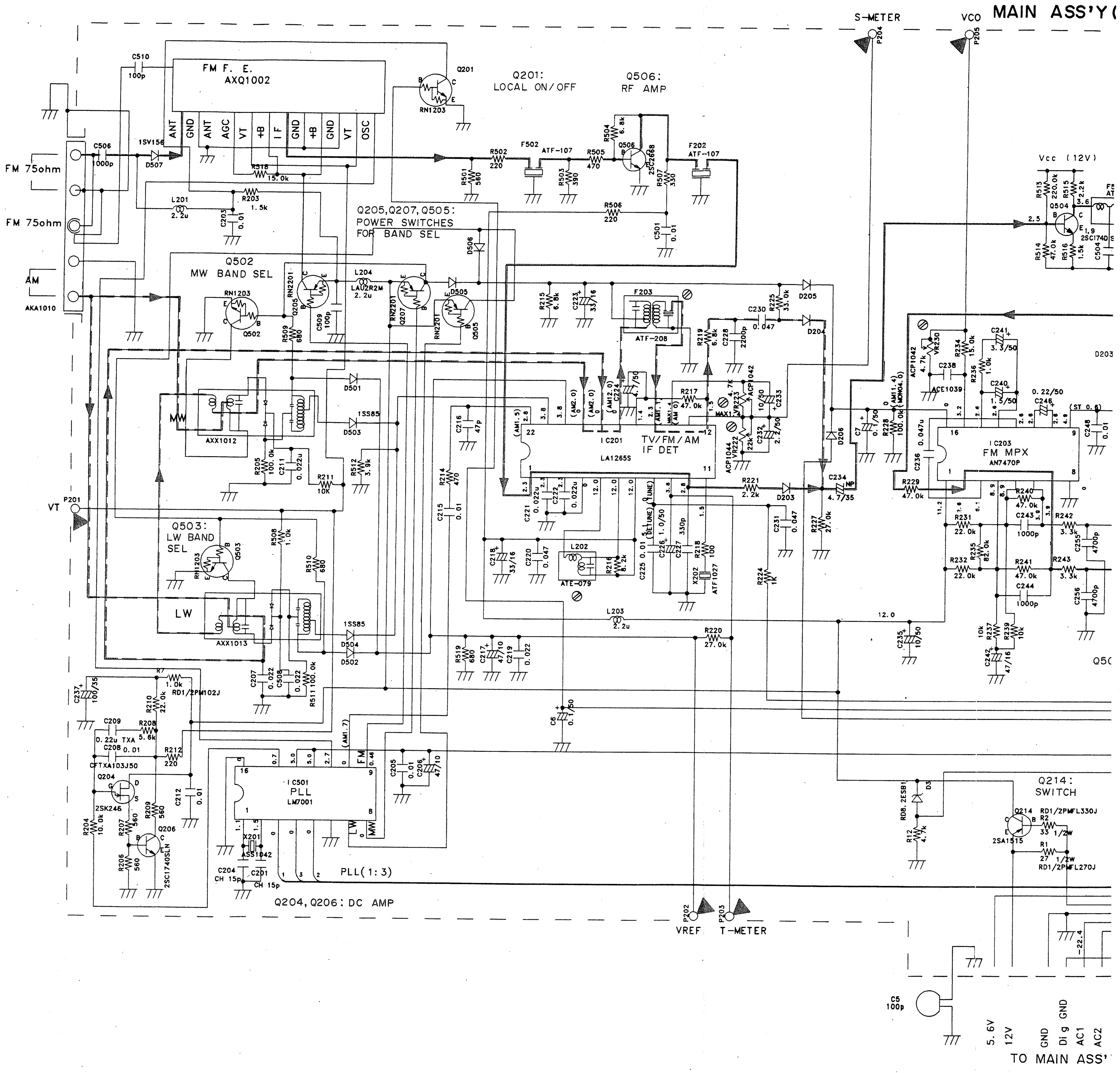
This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

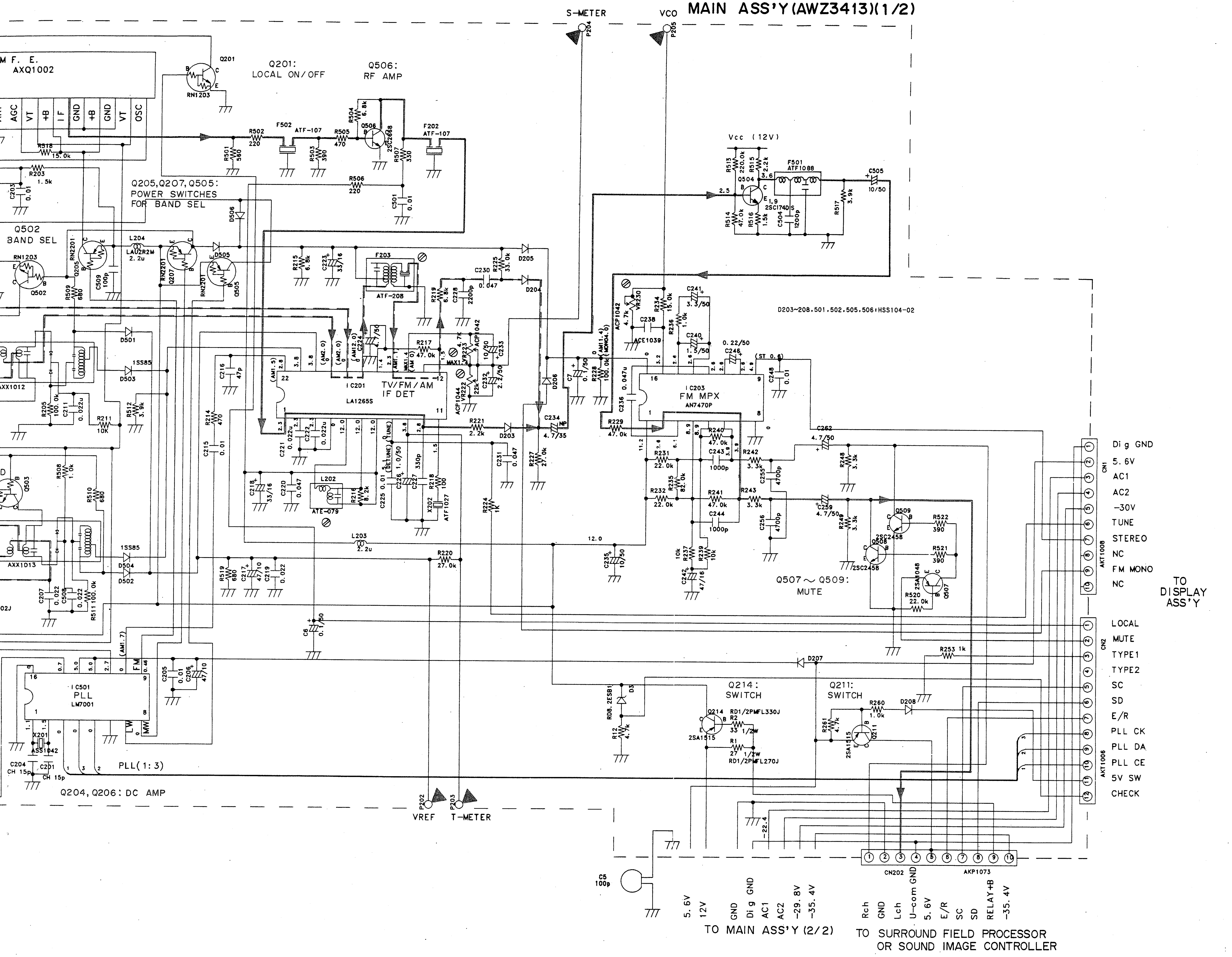
5.SWITCHES :

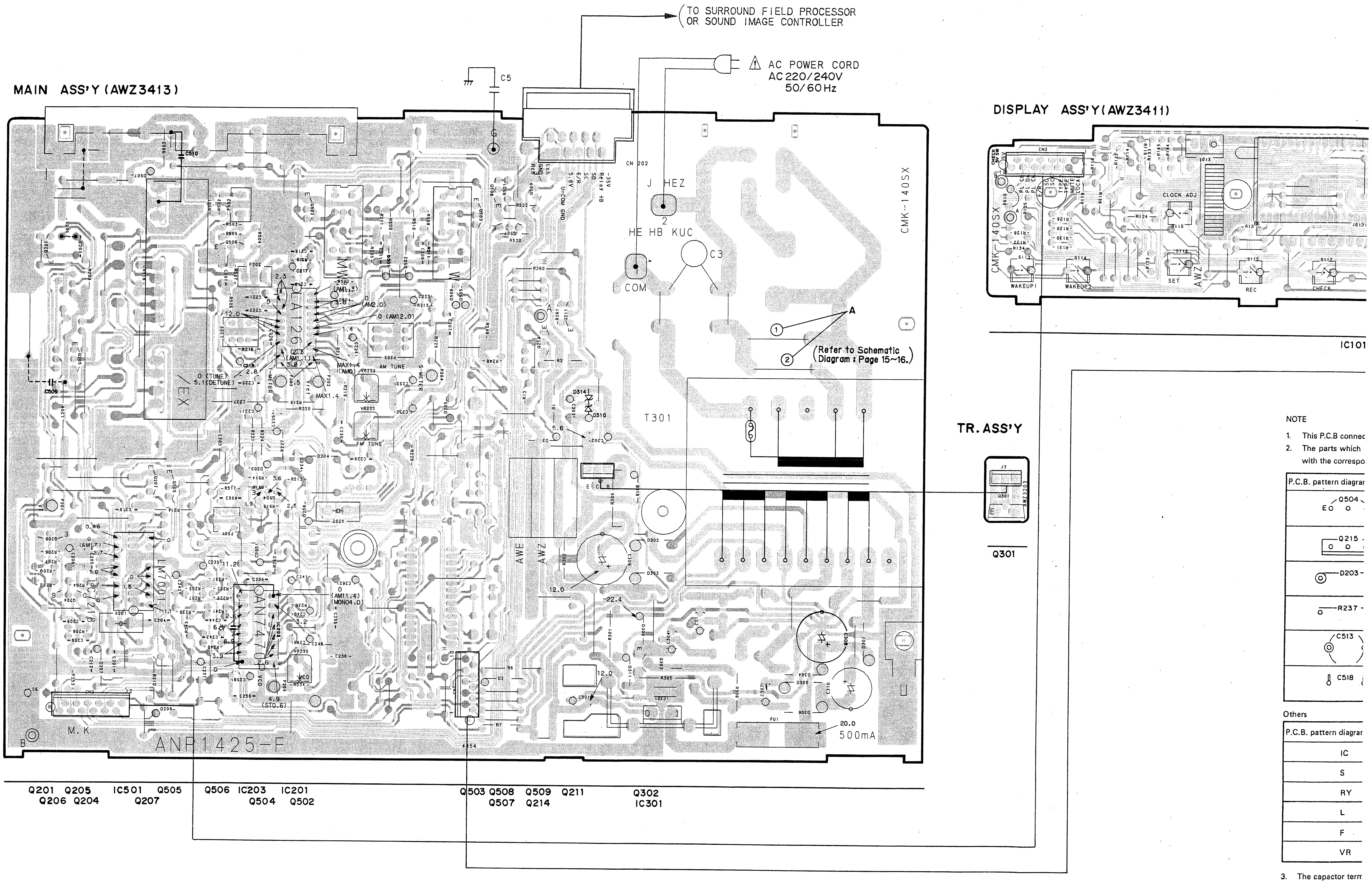
DISPLAY ASSEMBLY

S113 : WAKE-UP 1
S114 : WAKE-UP 2
S115 : REC
S116 : CLOCK ADJ
S117 : CHECK
S118 : SET
S119 : LOCAL

S120 : BAND
S121 : M. SCAN
S122 : MEMORY
S123 : ERASE
S124 : FREQ./STATION
S133 : TUNING JOG DOWN↔UP




MAIN ASS'Y (AWZ3413)(1/2)
S-METER
VCO
P204
P205
F. E.
AXQ1002
AGC
VT
+B
IF
GND
+B
GND
VT
OSC
Q201
Q201:
LOCAL ON/OFF
Q506:
RF AMP
RN1203
R502 220
F502
ATF-107
R505 470
R504 6.8k
Q506 2SC2668
F202
ATF-107
R501 560
R503 390
R507 330
R518 15.0k
R203 1.5k
C203 0.01
R506 220
C501 0.01
Q205,Q207,Q505:
POWER SWITCHES
FOR BAND SEL
Q502
BAND SEL
RN1203
RN2201
Q205
L204
LAU2R2M
2.2u
Q207
RN2201
D506
D505
Q505
C509 100p
R509 680
R215 6.8k
C223 33/16
F203
ATF-208
R219 6.8k
C228 2200p
C230 0.047
R225 33.0k
D205
D204
D501
1SS85
D503
AXX1012
R205 100.0k
C211 0.022u
R211 10K
R512 3.9k
C216 47p
R214 470
IC201
LA1265S
TV/FM/AM
IF DET
R217 47.0k
VR223 4.7k
ACP1042
C233 10/50
C232 2.2/50
VR222 22k
ACP1044
R221 2.2k
D203
C234 4.7/35
D206
C7 0.1/50
R228 100.0k
ACP1042
VR230 4.7k
C238
ACE1039
R234 15.0k
R236 1.0k
C241 3.3/50
C240 5/50
C246 0.22/50
C248 0.01
C236 0.047u
IC203
FM MPX
AN7470P
R229 47.0k
D203~208.501.502.505.506:HSS104-02
Vcc (12V)
R513 220.0k
R515 2.2k
F501
ATF1088
C505 10/50
Q504
2SC1740S
R514 47.0k
R516 1.5k
C504 1200p
R517 3.9k
C215 0.01
C221 0.022u
C222 0.022u
C218 33/16
C220 0.047
L202
ATE-079
R216 8.2k
C225 0.01
C226 1.0/50
C227 330p
R218 100
X202
ATF1027
C231 0.047
R227 27.0k
R224 1K
R240 47.0k
R231 22.0k
C243 1000p
R242 3.3k
C255 4700p
R232 22.0k
R235 82.0k
R241 47.0k
R243 3.3k
C244 1000p
C256 4700p
C262 4.7/50
R248 3.3k
C259 4.7/50
R249 3.3k
Q509
2SC2458
R522 390
Q508
2SC2458
R521 390
2SA1048
Q507
R520 22.0k
Q507~Q509:
MUTE
R237 10k
R239 10k
C242 47/16
C235 10/50
L203 2.2u
R220 27.0k
R508 1.0k
Q503
R510 680
1SS85
D504
D502
AXX1D13
C207 0.022
C508 0.022
R511 100.0k
R519 680
C217 47/10
C219 0.022
C6 0.1/50
IC501
PLL
LM7001
C205 0.01
C206 47/10
X201
ASS1042
C204 CH 15p
C201 CH 15p
PLL(1:3)
Q204,Q206: DC AMP
P202
VREF
P203
T-METER
D207
R253 1k
RD8.2ESB1
D3
R12 4.7k
Q214:
SWITCH
Q214
2SA1515
RD1/2PMFL330J
R2 33 1/2W
R1 27 1/2W
RD1/2PMFL270J
Q211:
SWITCH
R260 1.0k
D208
R261 4.7k
2SA1515
Q211
CN1
AKT1008
Dig GND
5.6V
AC1
AC2
-30V
TUNE
STEREO
NC
FM MONO
NC
TO
DISPLAY
ASS'Y
CN2
AKT1006
LOCAL
MUTE
TYPE1
TYPE2
SC
SD
E/R
PLL CK
PLL DA
PLL CE
5V SW
CHECK
C5 100p
CN202
AKP1073
5.6V
12V
GND
Dig GND
AC1
AC2
-29.8V
-35.4V
TO MAIN ASS'Y (2/2)
Rch
GND
Lch
U-com GND
5.6V
E/R
SC
SD
RELAY+B
-35.4V
TO SURROUND FIELD PROCESSOR
OR SOUND IMAGE CONTROLLER
4
5
6
7
8
9
A
B
C
D



NOTE

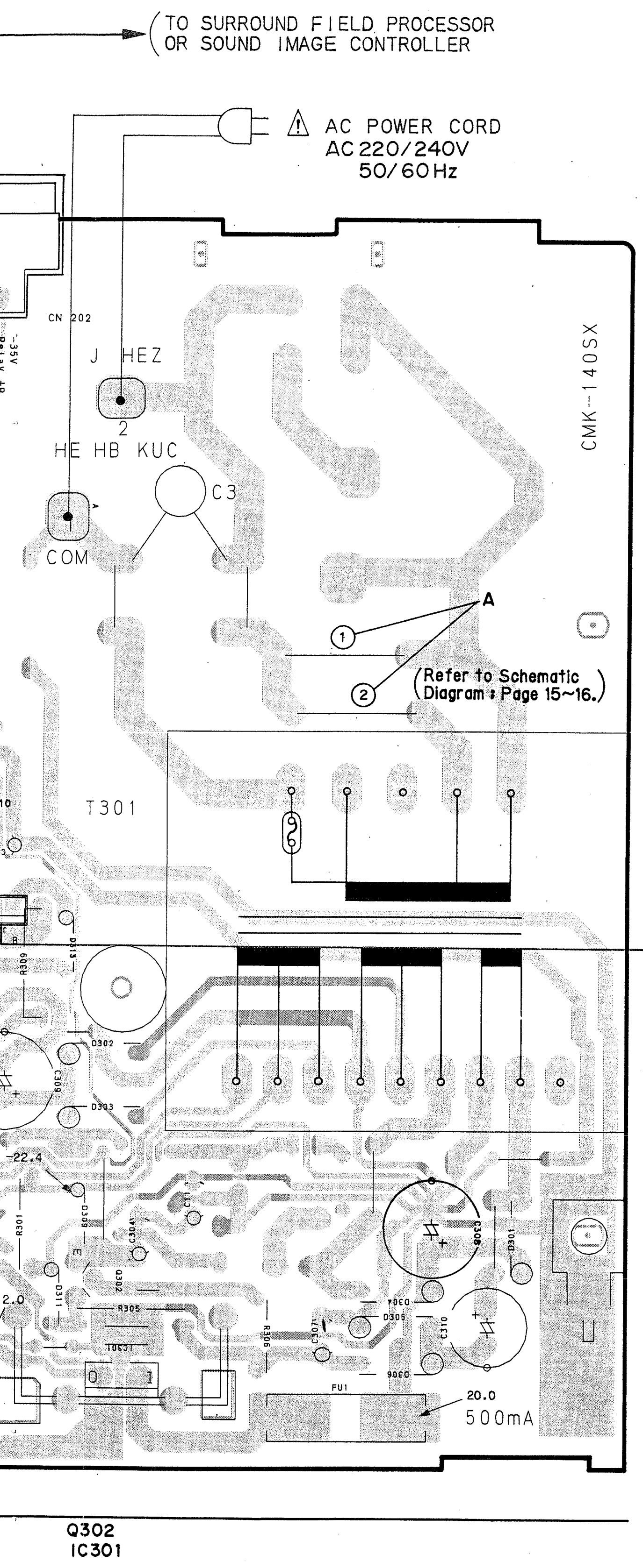
1. This P.C.B connec
2. The parts which
   with the correspo

P.C.B. pattern diagrar
E Q504
Q215
D203
R237
C513
C518

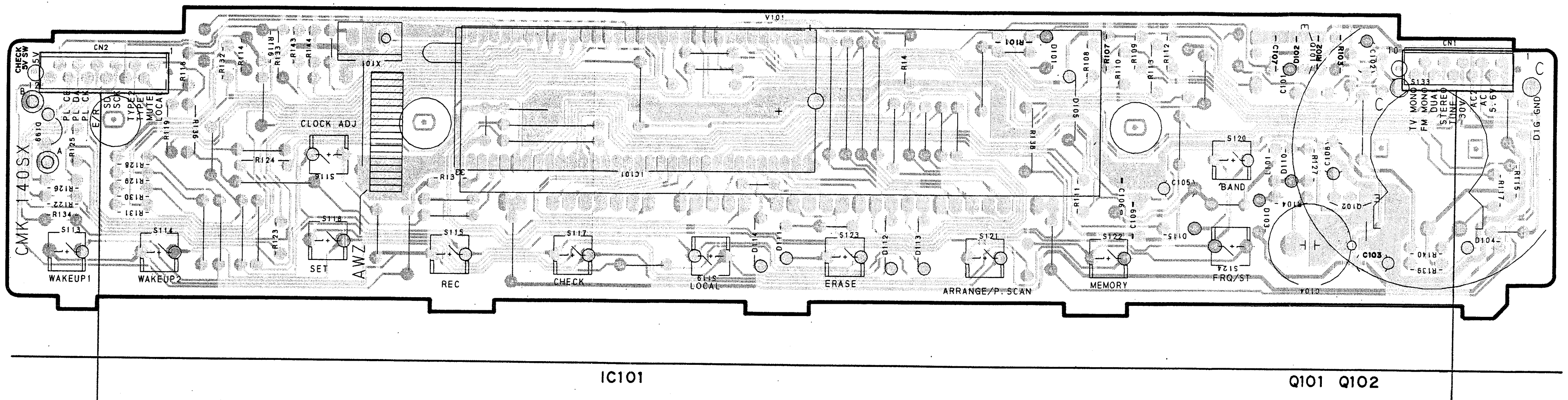
Others

P.C.B. pattern diagrar
IC
S
RY
L
F
VR

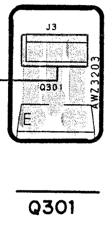
3. The capactor terr
4. The diode termina
5. The transistor terr


TO SURROUND FIELD PROCESSOR
OR SOUND IMAGE CONTROLLER
AC POWER CORD
AC220/240V
50/60Hz
CN 202
J HEZ
2
HE HB KUC
C3
COM
CMK-140SX
A
①
②
(Refer to Schematic Diagram : Page 15~16.)
T301
FU1
20.0
500mA
Q302
IC301

DISPLAY ASS'Y (AWZ3411)



TR. ASS'Y



NOTE

1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wirng symbols listed in the following Table.

P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
Q504 E○ ○ ○	E○ or E○	Transistor
Q215 ○ ○ ○	or	Radiator type transistor
◎ D203 ○	D203 ○—▶|—○	Diode
○ R237 ○	R237 ○—W—○	Resistor
C513 ◎ ○	○—|⊢+—○	Capacitor (Polarity)
C518	○—| |—○	Capacitor (Non-polarity)

Others

P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

3. The capactor terminal marked with ◎ (double circles) shows negative terminal.
4. The diode terminal marked with ◎ (double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.

Line Voltage Selection for HE and HB types

Line voltage can be changed as following steps.

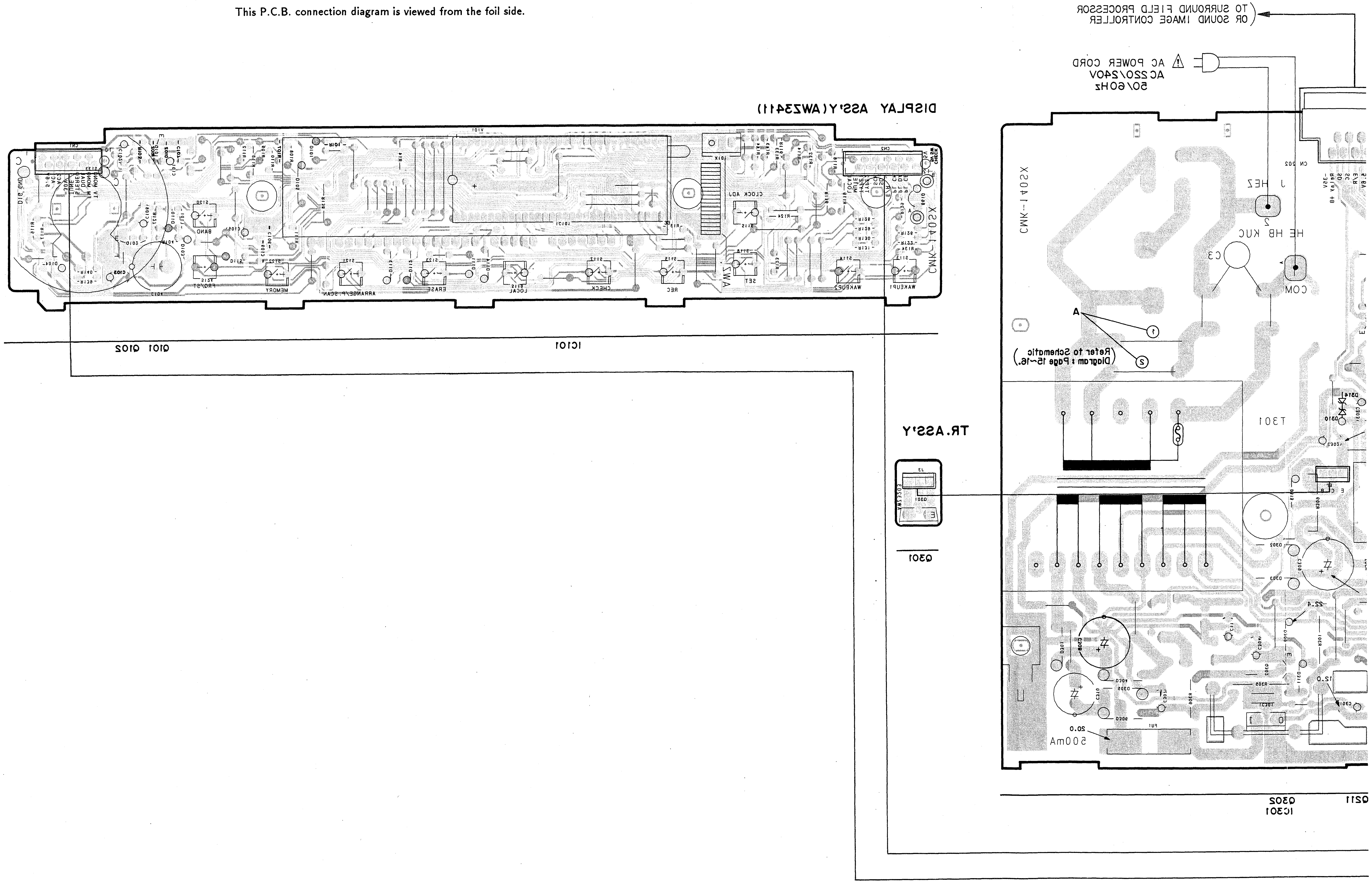
1. Disconnect the AC power cord.
2. Remove the top cover.
3. Change the connection of the jumper wire A as follows :

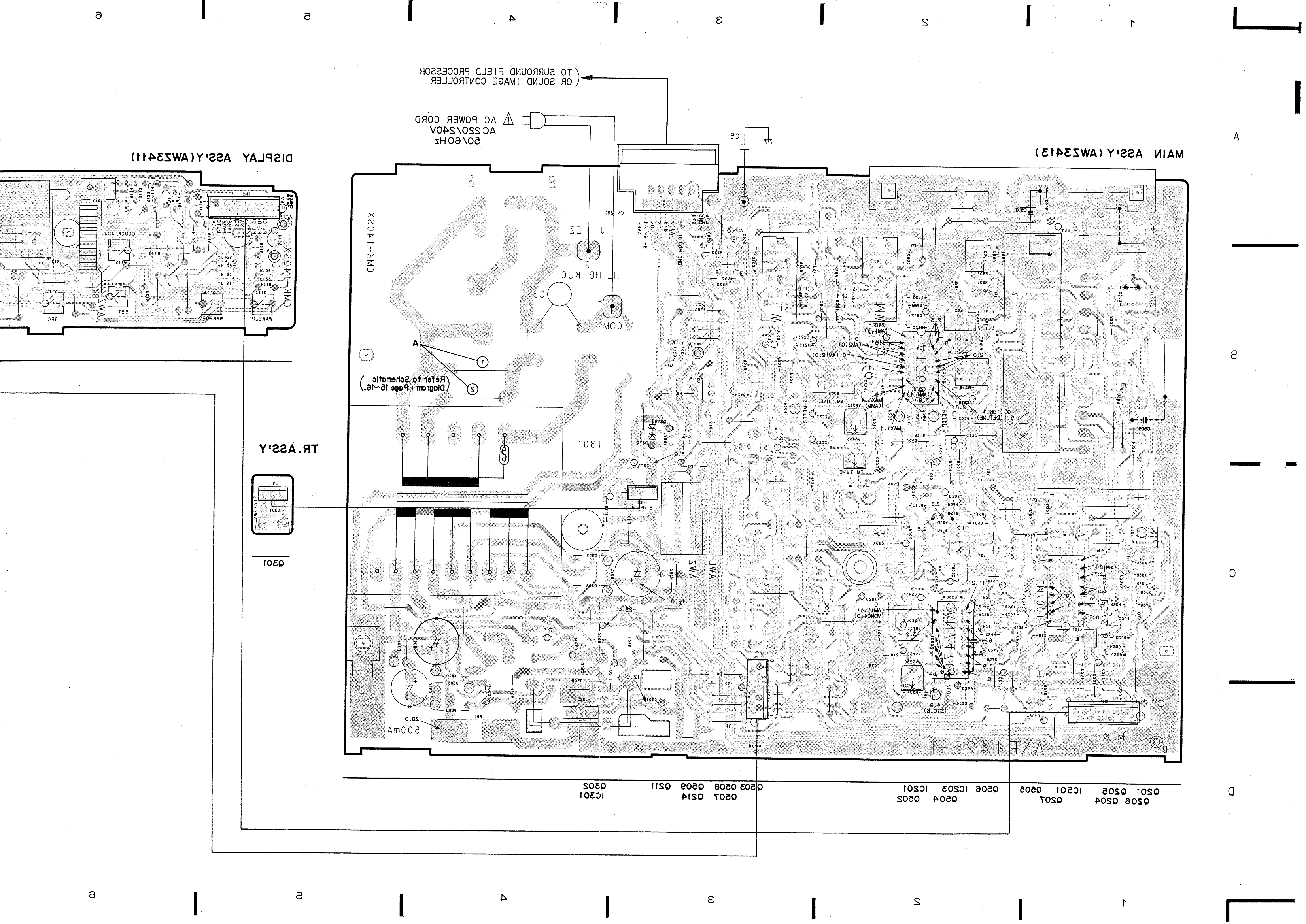
Voltage	Jumper wire A position
220V	②
240V	①

4. Stick the line voltage label on the rear panel.

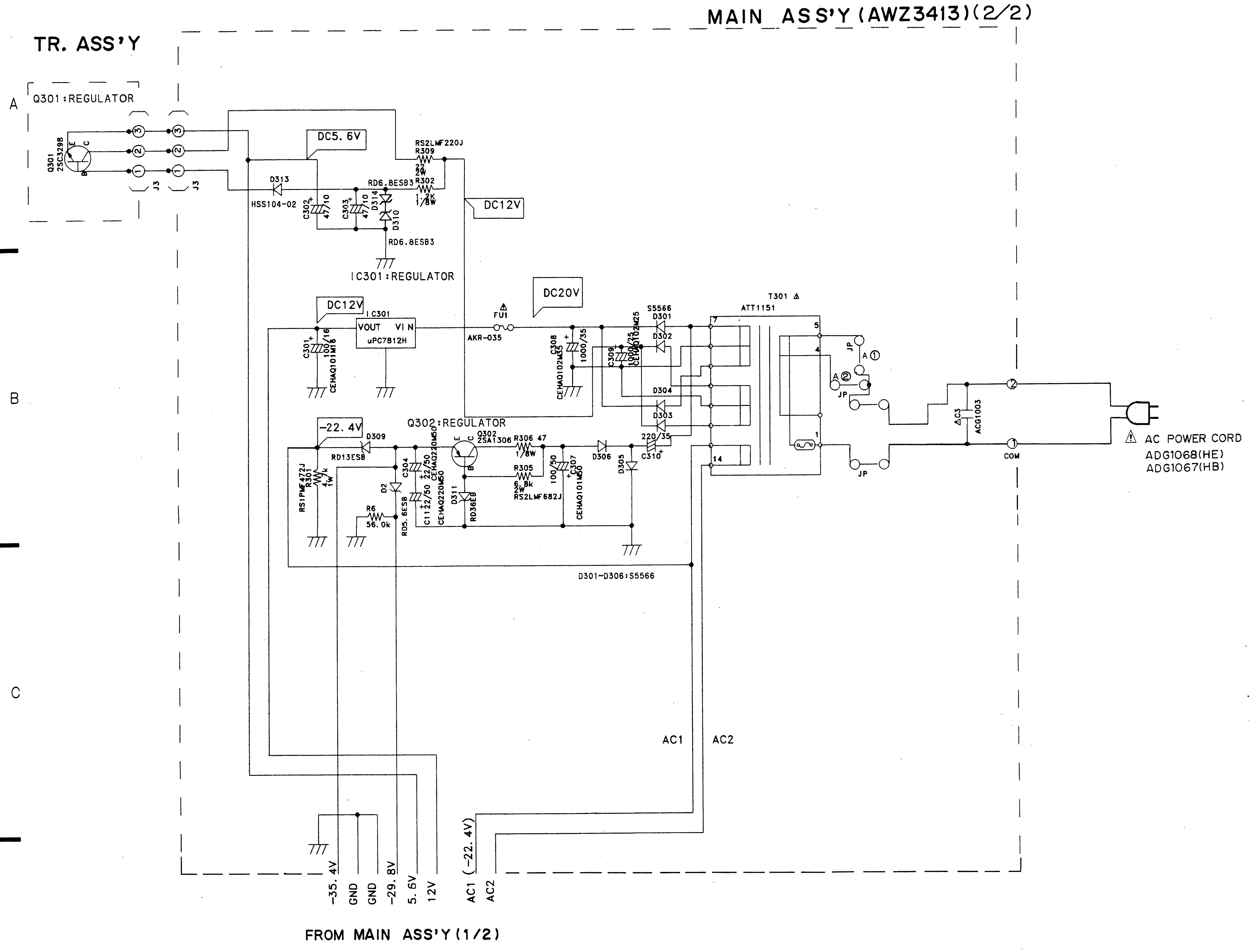
Parts No.	Description
AXX-193	220V label
AXX-192	240V label

This P.C.B. connection diagram is viewed from the foil side.




MAIN ASS'Y (AWZ3413)
DISPLAY ASS'Y (AWZ3411)
TR.ASS'Y
TO SURROUND FIELD PROCESSOR
OR SOUND IMAGE CONTROLLER
AC POWER CORD
AC 220/240V
50/60Hz
Refer to Schematic
Diagram : Page 15~16.
ANP1425-F
T301
CWK-1405X
XS041-KWC
CN202
COM
C3
C5
Q301
500mA
Q201 Q205 Q206 Q204
IC501 Q505 Q207
Q506 IC203 IC201 Q504 Q502
Q503 Q508 Q507 Q509 Q214 Q211
Q302 IC301
1 2 3 4 5 6
A B C D

3. 2 TR ASSEMBLY AND MAIN ASSEMBLY (AWZ3413)(2/2)



Line Voltage Selection for HE and HB types

Line voltage can be changed as following steps.

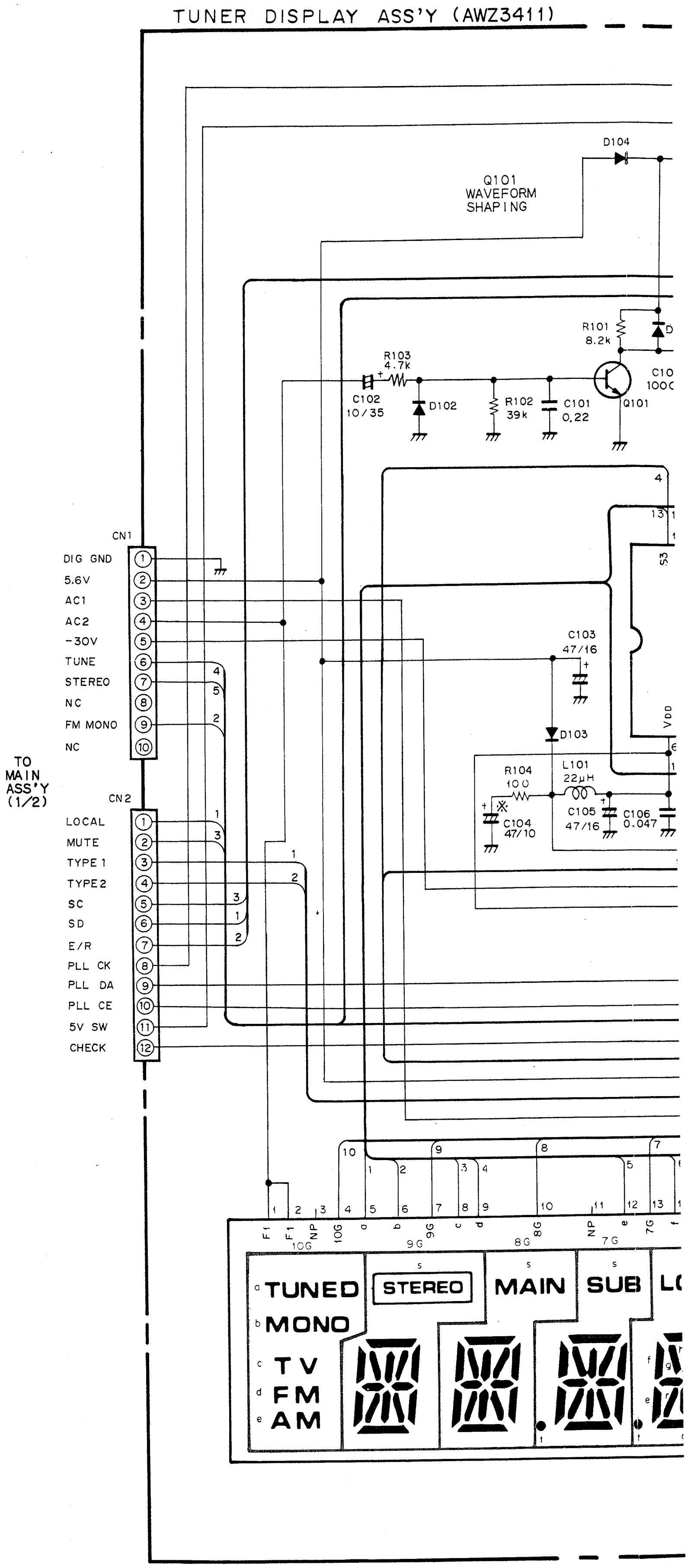
1. Disconnect the AC power cord.
2. Remove the top cover.
3. Change the connection of the jumper wire A as follows :

Voltage	Jumper wire A position
220V	②
240V	①

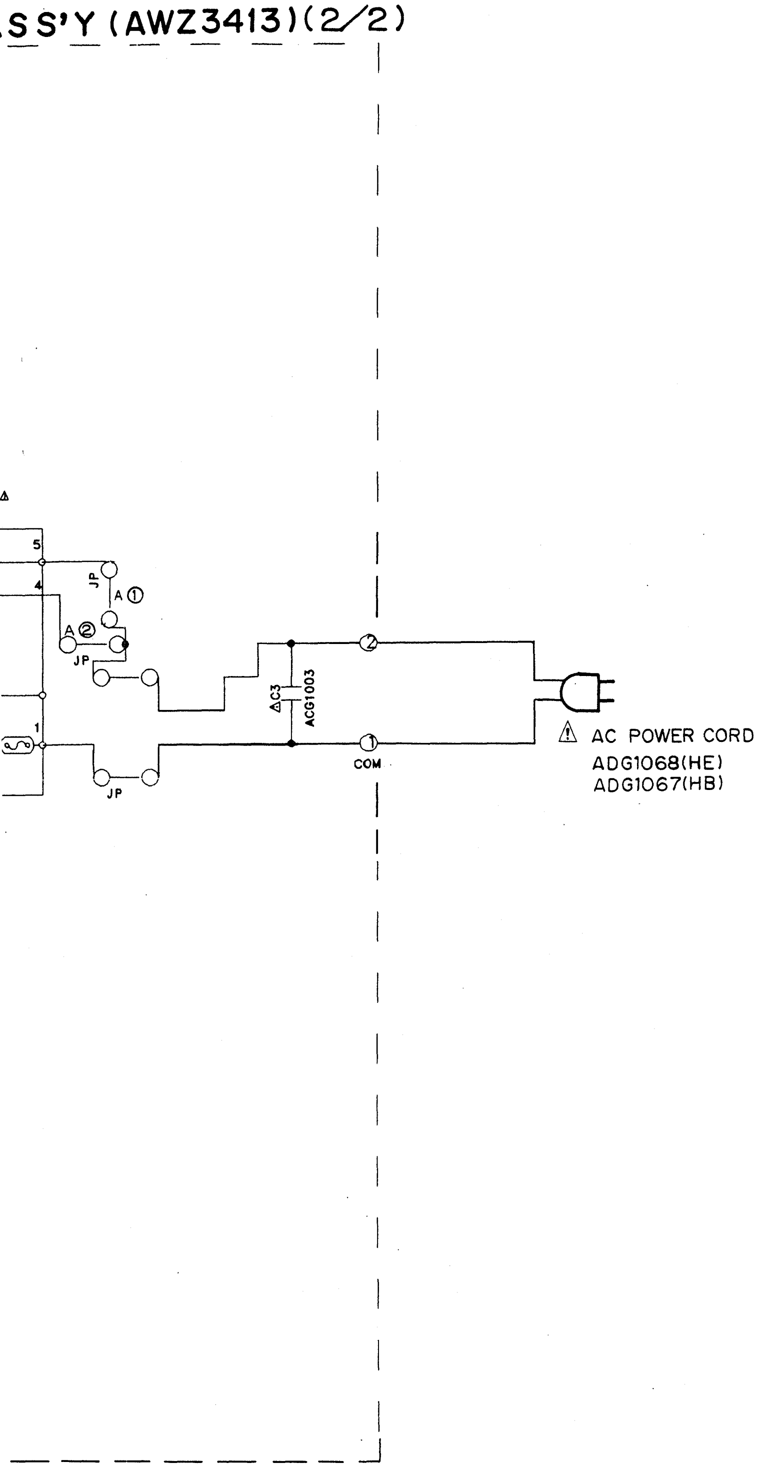
4. Stick the line voltage label on the rear panel.

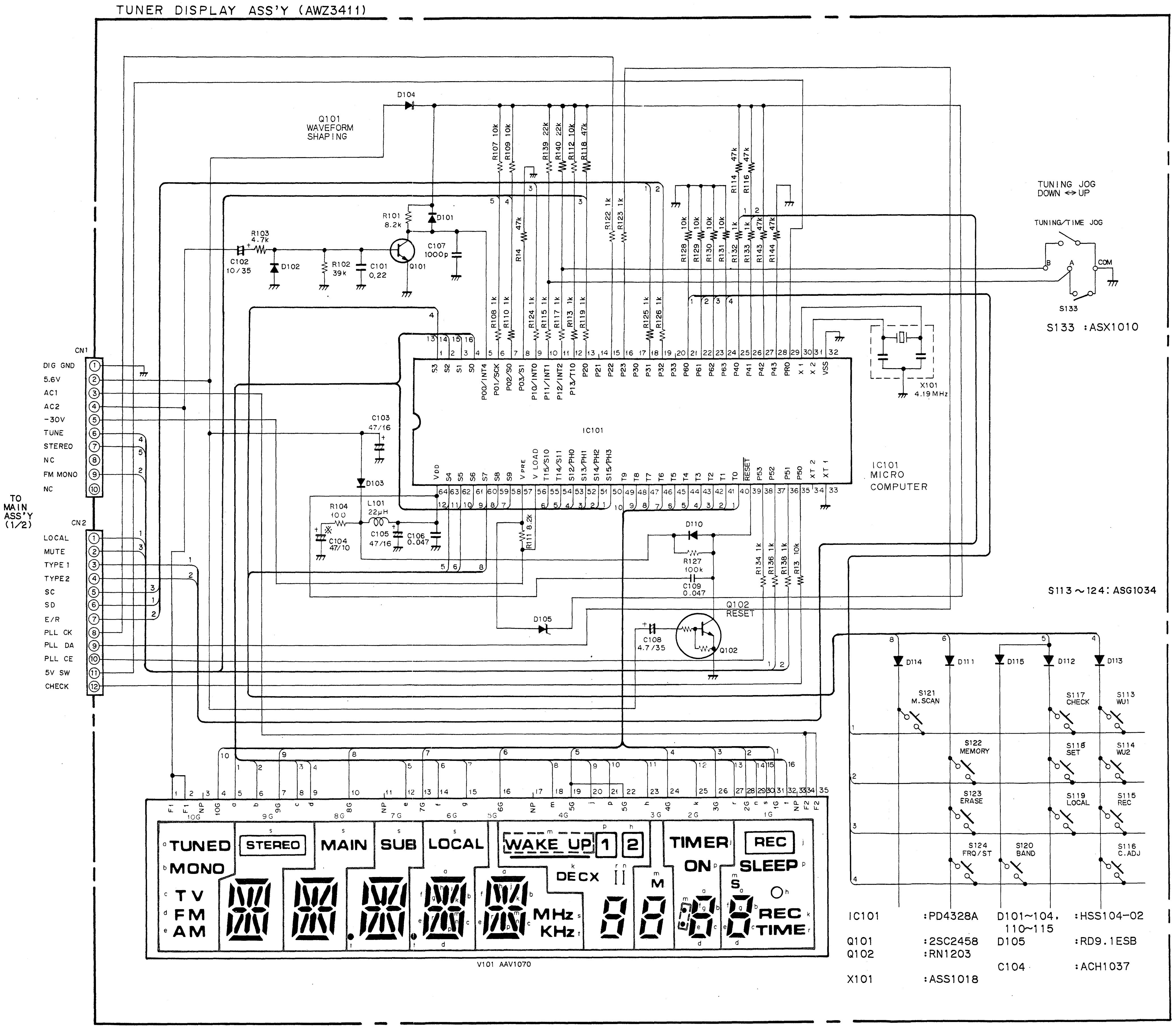
Parts No.	Description
AXX-193	220V label
AXX-192	240V label

3. 3 DISPLAY ASSEMBLY (AWZ3411)



3. 3 DISPLAY ASSEMBLY (AWZ3411)





ypes
g steps.

wire A as follows :

sition

4. Stick the line voltage label on the rear panel.

Parts No.	Description
AXX-193	220V label
AXX-192	240V label

4. PCB PARTS LIST

NOTES :

- *Parts without part number cannot be supplied.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex.1 *When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).*

560Ω 56×10^1 561 ………… *RD1/4PS*$\boxed{5}\boxed{6}\boxed{1}$*J*
$47k\Omega$ 47×10^3 473 ………… *RD1/4PS*$\boxed{4}\boxed{7}\boxed{3}$*J*
0.5Ω 0R5 ………… *RD2H*$\boxed{0}\boxed{R}\boxed{5}$*K*
1Ω 010 ………… *RD1P*$\boxed{0}\boxed{1}\boxed{0}$*K*

Ex.2 *When there are 3 effective digits (such as in high precision metal film resistors).*

$5.62k\Omega$ 562×10^1 5621 ………… *RD1/4SR*$\boxed{5}\boxed{6}\boxed{2}\boxed{1}$*F*

Mark	Symbol & Description	Part No.
	TR. ASSEMBLY	
	SEMICONDUCTORS	
	Q301 TRANSISTOR	2SC3298
	◉DISPLAY ASSEMBLY (AWZ3411)	
	SEMICONDUCTORS	
	IC101 MICRO COMPUTER	PD4328A
	Q101 TRANSISTOR	2SC2458
	Q102 TRANSISTOR	RN1203
	D101-D104 DIODE	HSS104-02
	D105 ZENER DIODE	RD9.1ESB
	D110-D115 DIODE	HSS104-02
	SWITCHES	
	S113-S124 SWITCH	ASG1034
	S133 ROTARY ENCODER	ASX1010
	COIL	
	L101 AXIAL INDUCTOR	LAU220K
	CAPACITORS	
	C101 AUDIO FILM CAPACITOR	CFTXA224J50
	C102 ELECTROLYTIC CAPACIT	CEJA100M35
	C103 ELECTROLYTIC CAPACIT	CEJA470M16
	C104 CEA (47000/5.5V)	ACH1037
	C105 ELECTROLYTIC CAPACIT	CEJA470M16
	C106 CERAMIC CAPACITOR	CKDYX473M25
	C107 CERAMIC CAPACITOR	CKPUYB102K50
	C108 ELECTROLYTIC CAPACIT	CEJA4R7M35
	C109 CERAMIC CAPACITOR	CKDYX473M25
	RESISTORS	
	All resistors	RD1/8PM□□□J
	OTHERS	
	V101 FL TUBE	AAV1070
	X101 CERAMIC RESONATOR	ASS1018

Mark	Symbol & Description	Part No.
	◉MAIN ASSEMBLY (AWZ3413)	
	SEMICONDUCTORS	
	IC201 AM/FM IC	LA1265S
	IC203 MPX IC	AN7470P
	IC301 REGULATOR IC	UPC7812H
	IC501 PLL IC	LM7001
	Q201 TRANSISTOR	RN1203
	Q204 N-FET	2SK246
	Q205 TRANSISTOR	RN2201
	Q206 TRANSISTOR	2SC1740SLN
	Q207 TRANSISTOR	RN2201
	Q211,Q214 TRANSISTOR	2SA1515
	Q302 TRANSISTOR	2SA1306
	Q502,Q503 TRANSISTOR	RN1203
	Q504 TRANSISTOR	2SC1740S
	Q505 TRANSISTOR	RN2201
	Q506 TRANSISTOR	2SC2668
	Q507 TRANSISTOR	2SA1048
	Q508,Q509 TRANSISTOR	2SC2458
	D2 ZENER DIODE	RD5.6ESB
	D3 ZENER DIODE	RD8.2ESB1
	D203-D208 DIODE	HSS104-02
	D301-D306 DIODE	S5566
	D309 ZENER DIODE	RD13ESB
	D310 ZENER DIODE	RD6.2ESB3
	D311 ZENER DIODE	RD36EB
	D313 DIODE	HSS104-02
	D314 ZENER DIODE	RD6.2ESB3
	D501,D502 DIODE	HSS104-02
	D503,D504 DIODE	1SS85
	D505,D506 DIODE	HSS104-02
	D507 DIODE	1SV156

Mark	Symbol & Description	Part No.
	COILS AND FILTERS	
	F202 CERAMIC FILTER	ATF-107
	F203 CERAMIC FILTER	ATF-208
	F501 FILTER	ATF1088
	F502 CERAMIC FILTER	ATF-107
	L201 AXIAL INDUCTOR	LAU2R2M
	L202 COIL	ATE-079
	L203,L204 AXIAL INDUCTOR	LAU2R2M
	CAPACITORS	
	C3 CKA (0.01/AC400V)	ACG1003
	C6 ELECTR.CAPACITOR	CEAS0R1M50
	C7 ELECTROLYTIC CAPACIT	CEAS0R1M50
	C11 ELECTROLYTIC CAPACIT	CEHAQ220M50
	C201 CERAMIC CAPACITOR	CCDCH150J50
	C203 CERAMIC CAPACITOR	CKDYF103Z50
	C204 CERAMIC CAPACITOR	CCDCH150J50
	C205 CERAMIC CAPACITOR	CKPUYY103M16
	C206 ELECTR.CAPACITOR	CEAS470M10
	C207 CERAMIC CAPACITOR	CKDYF223Z50
	C208 AUDIO FILM CAPACITOR	CFTXA103J50
	C209 AUDIO FILM CAPACITOR	CFTXA224J50
	C211 CERAMIC CAPACITOR	CKDYF223Z50
	C212 CERAMIC CAPACITOR	CKDYF103Z50
	C215 CERAMIC CAPACITOR	CKDYB103K50
	C216 CERAMIC CAPACITOR	CCDCH470J50
	C217 ELECTR.CAPACITOR	CEAS470M10
	C218 ELECTR.CAPACITOR	CEAS330M16
	C219 AXIAL CERAMIC CAPACITOR	CKPUYF223Z25
	C220 CERAMIC CAPACITOR	CKDYF473Z50
	C221,C222 CERAMIC CAPACITOR	CKDYF223Z50
	C223 ELECTR.CAPACITOR	CEAS330M16
	C224 ELECTR.CAPACITOR	CEAS4R7M50
	C225 CERAMIC CAPACITOR	CKPUYY103M16
	C226 ELECTR.CAPACITOR	CEAS010M50
	C227 CERAMIC CAPACITOR	CKPUYB331K50
	C228 CERAMIC CAPACITOR	CKDYB222K50
	C230,C231 CERAMIC CAPACITOR	CKDYX473M25
	C232 ELECTR.CAPACITOR	CEAS2R2M50
	C233 ELECTR.CAPACITOR	CEAS100M50
	C234 ELECTR.CAPACITOR	CEANP4R7M35
	C235 ELECTR.CAPACITOR	CEAS100M50
	C236 CERAMIC CAPACITOR	CKDYF473Z50
	C237 ELECTR.CAPACITOR	CEAS101M35
	C238 CAPACITOR	ACE1039
	C240 ELECTROLYTIC CAPACIT	CEAS1R5M50
	C241 ELECTR.CAPACITOR	CEAS3R3M50
	C242 ELECTR.CAPACITOR	CEAS470M16
	C243,C244 CERAMIC CAPACITOR	CKDYB102K50
	C246 ELECTR.CAPACITOR	CEASR22M50
	C248 CERAMIC CAPACITOR	CKPUYY103M16
	C255,C256 CERAMIC CAPACITOR	CKDYB472K50
	C259,C262 ELECTR.CAPACITOR	CEAS4R7M50
	C301 ELECTROLYTIC CAPACIT	CEHAQ101M16
	C302,C303 ELECTR.CAPACITOR	CEAS470M10

Mark	Symbol & Description	Part No.
	C304 ELECTROLYTIC CAPACIT	CEHAQ220M50
	C307 ELECTR.CAPACITOR	CEHAQ101M50
	C308 ELECTROLYTIC CAPACIT	CEHAQ102M35
	C309 ELECTROLYTIC CAPACIT	CEHAQ102M25
	C310 ELECTR.CAPACITOR	CEAS221M35
	C501 CERAMIC CAPACITOR	CKDYF103Z50
	C504 CERAMIC CAPACITOR	CKDYB122K50
	C505 ELECTR.CAPACITOR	CEAS100M50
	C506 CERAMIC CAPACITOR	CKPUYB102K50
	C508 CERAMIC CAPACITOR	CKDYF223Z50
	C509,C510 CERAMIC CAPACITOR	CCDSL101J50
	RESISTORS	
	R1 CARBON FILM RESISTOR	RD1/2PMFL270J
	R2 CARBON FILM RESISTOR	RD1/2PMFL330J
	R7 CARBON FILM RESISTOR	RD1/2PM102J
	R301 METAL OXIDE RESISTOR	RS1PMF472J
	R305 METAL OXIDE RESISTOR	RS2LMF682J
	R309 METAL OXIDE RESISTOR	RS2LMF220J
	VR222 VR	ACP1044
	VR223 VR	ACP1042
	VR230 VR	ACP1042
	Other resistors	RD1/8PM□□□J
	OTHERS	
⚠	T301 POWER TRANSFORMER	ATT1151
	CN202 SOCKET(10P)	AKP1073
	X201 CRYSTAL RESONATOR	ASS1042
	X202 CERAMIC RESONATOR	ATF1027
	SCREW	ABA1012
	ANTENNA TERMINAL 4-P	AKA1010
	2 SERIAL FE MODULE ASS'Y	AXQ1002
	AM RF TUNING BLOCK	AXX1012
	AM RF TUNING BLOCK	AXX1013

5.

- As t
- Whe
betv

5. 1 A

- Set t

Step No.
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3
4
5

5. 2 F

- Set t
- Perf

Step No.
1
2
3

LS AND FILTERS

Symbol & Description	Part No.
F202 CERAMIC FILTER	ATF-107
F203 CERAMIC FILTER	ATF-208
F501 FILTER	ATF1088
F502 CERAMIC FILTER	ATF-107
L201 AXIAL INDUCTOR	LAU2R2M
L202 COIL	ATE-079
L203,L204 AXIAL INDUCTOR	LAU2R2M

ACITORS

Symbol & Description	Part No.
C3 CKA (0.01/AC400V)	ACG1003
C6 ELECTR.CAPACITOR	CEAS0R1M50
C7 ELECTROLYTIC CAPACIT	CEAS0R1M50
C11 ELECTROLYTIC CAPACIT	CEHAQ220M50
C201 CERAMIC CAPACITOR	CCDCH150J50
C203 CERAMIC CAPACITOR	CKDYF103Z50
C204 CERAMIC CAPACITOR	CCDCH150J50
C205 CERAMIC CAPACITOR	CKPUYY103M16
C206 ELECTR.CAPACITOR	CEAS470M10
C207 CERAMIC CAPACITOR	CKDYF223Z50
C208 AUDIO FILM CAPACITOR	CFTXA103J50
C209 AUDIO FILM CAPACITOR	CFTXA224J50
C211 CERAMIC CAPACITOR	CKDYF223Z50
C212 CERAMIC CAPACITOR	CKDYF103Z50
C215 CERAMIC CAPACITOR	CKDYB103K50
C216 CERAMIC CAPACITOR	CCDCH470J50
C217 ELECTR.CAPACITOR	CEAS470M10
C218 ELECTR.CAPACITOR	CEAS330M16
C219 AXIAL CERAMIC CAPACITOR	CKPUYF223Z25
C220 CERAMIC CAPACITOR	CKDYF473Z50
C221,C222 CERAMIC CAPACITOR	CKDYF223Z50
C223 ELECTR.CAPACITOR	CEAS330M16
C224 ELECTR.CAPACITOR	CEAS4R7M50
C225 CERAMIC CAPACITOR	CKPUYY103M16
C226 ELECTR.CAPACITOR	CEAS010M50
C227 CERAMIC CAPACITOR	CKPUYB331K50
C228 CERAMIC CAPACITOR	CKDYB222K50
C230,C231 CERAMIC CAPACITOR	CKDYX473M25
C232 ELECTR.CAPACITOR	CEAS2R2M50
C233 ELECTR.CAPACITOR	CEAS100M50
C234 ELECTR.CAPACITOR	CEANP4R7M35
C235 ELECTR.CAPACITOR	CEAS100M50
C236 CERAMIC CAPACITOR	CKDYF473Z50
C237 ELECTR.CAPACITOR	CEAS101M35
C238 CAPACITOR	ACE1039
C240 ELECTROLYTIC CAPACIT	CEAS1R5M50
C241 ELECTR.CAPACITOR	CEAS3R3M50
C242 ELECTR.CAPACITOR	CEAS470M16
C243,C244 CERAMIC CAPACITOR	CKDYB102K50
C246 ELECTR.CAPACITOR	CEASR22M50
C248 CERAMIC CAPACITOR	CKPUYY103M16
C255,C256 CERAMIC CAPACITOR	CKDYB472K50
C259,C262 ELECTR.CAPACITOR	CEAS4R7M50
C301 ELECTROLYTIC CAPACIT	CEHAQ101M16
C302,C303 ELECTR.CAPACITOR	CEAS470M10

Mark	Symbol & Description	Part No.
	C304 ELECTROLYTIC CAPACIT	CEHAQ220M50
	C307 ELECTR.CAPACITOR	CEHAQ101M50
	C308 ELECTROLYTIC CAPACIT	CEHAQ102M35
	C309 ELECTROLYTIC CAPACIT	CEHAQ102M25
	C310 ELECTR.CAPACITOR	CEAS221M35
	C501 CERAMIC CAPACITOR	CKDYF103Z50
	C504 CERAMIC CAPACITOR	CKDYB122K50
	C505 ELECTR.CAPACITOR	CEAS100M50
	C506 CERAMIC CAPACITOR	CKPUYB102K50
	C508 CERAMIC CAPACITOR	CKDYF223Z50
	C509,C510 CERAMIC CAPACITOR	CCDSL101J50

RESISTORS

Mark	Symbol & Description	Part No.
	R1 CARBON FILM RESISTOR	RD1/2PMFL270J
	R2 CARBON FILM RESISTOR	RD1/2PMFL330J
	R7 CARBON FILM RESISTOR	RD1/2PM102J
	R301 METAL OXIDE RESISTOR	RS1PMF472J
	R305 METAL OXIDE RESISTOR	RS2LMF682J
	R309 METAL OXIDE RESISTOR	RS2LMF220J
	VR222 VR	ACP1044
	VR223 VR	ACP1042
	VR230 VR	ACP1042
	Other resistors	RD1/8PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
⚠	T301 POWER TRANSFORMER	ATT1151
	CN202 SOCKET(10P)	AKP1073
	X201 CRYSTAL RESONATOR	ASS1042
	X202 CERAMIC RESONATOR	ATF1027
	SCREW	ABA1012
	ANTENNA TERMINAL 4-P	AKA1010
	2 SERIAL FE MODULE ASS'Y	AXQ1002
	AM RF TUNING BLOCK	AXX1012
	AM RF TUNING BLOCK	AXX1013

5. ADJUSTMENT

- As to connections and points to be adjusted, refer to Fig. 5-1 and Fig. 5-2.
- Where and asterisk(*) is given for "level dBμ," set to the level (dBμ) at which the voltage is roughly half the voltage between P204 and GND at 60dB.

5. 1 AM TUNER ADJUSTMENT

- Set the BAND selector to "AM".

Step No.	Adjustment Title	AM SG(400Hz, 30% modulation)		Reception Frequency Display	Adjustment	
		Frequency(kHz)	Level(dBμ)		Adjustment Location	Specifications
1	Tracking adjustment (HEWZI type only)	603	*	603kHz	MW block ANT coil (TC1)	Adjust so that the DC voltage between P204 and GND is maximum.
2		1395		1395kHz	TC501	
3		Repeat 1 and 2 above				
4	IFT adjustment (HEWZI type only)	603	*	603kHz	F203	
5	TUNED indicator sensitivity adjustment	999	55±5	999kHz	VR223	Adjust so that the indicator lights up.

5. 2 FM TUNER ADJUSTMENT

- Set the BAND selector to "FM".
- Perform VCO adjustment two minutes or more after turning the power ON.

Note : Stereo modulation : Main 1kHz L + R±68.25Hz dev.
Pilot 19kHz±6.75kHz dev.

Step No.	Adjustment Title	FM SG(1kHz±75kHz dev.)		Reception Frequency Display	Adjustment	
		Frequency(MHz)	Level(dBμ)		Adjustment Location	Specifications
1	Detector coil T-meter adjustment	98.0 (No modulation)	80	98.0MHz	L202	Adjust so that the DC voltage between P202 and P203 is ±50mV.
2	VCO adjustment	98.0 (No modulation)	80	98.0MHz	VR230	Adjust so that the frequency between P205 and GND is 76±0.5kHz
3	TUNED indicator sensitivity adjustment	98.0 (No modulation)	20±3	98.0MHz	VR222	Adjust so that the indicator lights up.

5. RÉGLAGE

- Les raccordements et les points de réglages sonto représentés à la Fig. 5-1 et Fig. 5-2.
- Lorsqu'un astérisque accompagne un "niveau dBμ", réglar à un niveau (dBμ) tel que la tension soit à peu prés la moitié de celle qui est présente entre P204 et GND pour 60 dB.

5. 1 RÉGLAGE DU SYNTONISEUR AM

- Placer le sélecteur BAND sur la position "AM".

Etape No.	Items de réglage	AM SG(400Hz, 30% modulation)		Affichage de fréquence de réception	Réglage	
		Fréquence (kHz)	Niveau (dBμ)		Lieu de réglage	Caractéristiques
1	Réglage de l'alignement (Seuls les type HEWZI)	603	*	603kHz	Bobine-antenne Bloc PO (TC1)	Réglar de manière que la tension continue entre P204 et GND soit maximale.
2		1395		1395kHz	TC501	
3		Répète 1 et 2 ci-dessus.				
4	Réglage de IFT (Seuls les type HEWZI)	603	*	603kHz	F203	
5	Indicateurs de TUNED Niveau d'éclairement	999	55±5	999kHz	VR223	Le régler de manière que les indicateurs de TUNED commencent à s'allumer.

5. 2 RÉGLAGE DU SYNTONISEUR FM

- Placer le sélecteur BAND sur la position "FM".
- Régler le VCO après deux minutes(ou plus) de mise sous tension.

Note : Modulation stéréo : Principal 1kHz L + R± 68,25Hz dév.
Pilote 19kHz± 6,75kHz dév.

Etape No.	Items de réglage	FM SG(1kHz±75kHz dév.)		Affichage de fréquence de réception	Réglage	
		Fréquence (MHz)	Niveau (dBμ)		Lieu de réglage	Caractéristiques
1	Réglage de la bobine de détection	98,0 (Sans modulation)	80	98,0MHz	L202	Réglar de manière que la tension continue entre P202 et P203 soit égale à ±50mV.
2	Réglage du VCO	98,0 (Sans modulation)	80	98,0MHz	VR230	Réglar de manière que la fréquence entre P205 et GND soit égale à 76 ± 0,5 kHz.
3	Indicateurs de TUNED Niveau d'éclairement	98,0 (Sans modulation)	20±3	98,0MHz	VR222	Le régler de manière que les indicateurs de TUNED commencent à s'allumer.

5. AJUSTE

- Para las conexiones y puntos de ajuste, refiérase a la Fig. 5-1 y Fig 5-2.
- Donde un asterisco (*) represente el "nivel dBμ", ajuste al nivel (dBμ) en el que la tension sea aproximadamente la mitad de la tensión entre P204 y GND a 60 dB.

5. 1 AJUSTE DE LA SECCIÓN DEL SINTONIZADOR DE AM

- Ajuste el selector BAND a la posición "AM".

N°. de paso	Items de ajuste	AM SG(400Hz, 30% modulación)		Frecuencimetro de recepción	Ajuste	
		Frequencia (kHz)	Nivel (dBμ)		Lugar de ajuste	Especificaciones
1	Ajuste de alineación (Sólo los tipo HEWZI)	603	*	603kHz	Bobina de antena colectiva de MW (TC1)	Ajuste de manera que la tensión de CC entre P204 y GND sea la máxima.
2		1395		1395kHz	TC501	
3		Repita los pasos 1 y 2 arriba descritos				
4	Ajuste de IFT (Sólo los tipo HEWZI)	603	*	603kHz	F203	
5	Nivel de iluminación de TUNED	999	55±5	999kHz	VR223	Ajustelo de forma que los indecadores de TUNED comiencen a encenderase.

5. 2 AJUSTE DE LA SECCIÓN DEL SINTONIZADOR DE FM

- Ajuste el selector BAND a la posición "FM".
- Realice el ajuste VCO dos minutos o más después de conectar la alimentación.

Nota : Modulación estereo : Principal 1kHz L + R±68.25Hz dev.
Pilote 19kHz±6.75kHz dev.

N°. de paso	Items de ajuste	FM SG(1kHz±75kHz dev.)		Frecuencimetro de recepción	Ajuste	
		Frequencia (MHz)	Nivel (dBμ)		Lugar de ajuste	Especificaciones
1	Ajuste del medidor T de la bobina detectora	98.0 (Sin modulation)	80	98.0MHz	L202	Ajuste de manera que la tensión de CC entre P202 y P203 sea de ± 50mV.
2	Ajuste VCO	98.0 (Sin modulation)	80	98.0MHz	VR230	Ajuste de manera que la frequencia entre P205 y GND sea de 76 ± 0.5 kHz.
3	Nivel de iluminación de TUNED	98.0 (Sin modulation)	20±3	98.0MHz	VR222	Ajustelo de forma que los indecadores de TUNED comiencen a encenderase.

5. RÉGLAGE

- Les raccordements et les points de réglages sonto représentés à la Fig. 5-1 et Fig. 5-2.
- Lorsqu'un astérisque accompagne un "niveau dBμ", réglar à un niveau (dBμ) tel que la tension soit à peu près la moitié de celle qui est présente entre P204 et GND pour 60 dB.

5. 1 RÉGLAGE DU SYNTONISEUR AM

- Placer le sélecteur BAND sur la position "AM".

Etape No.	Items de réglage	AM SG(400Hz, 30% modulation)		Affichage de fréquence de réception	Réglage	
		Fréquence (kHz)	Niveau (dBμ)		Lieu de réglage	Caractéristiques
1	Réglage de l'alignement (Seuls les type HEWZI)	603	*	603kHz	Bobine-antenne Bloc PO (TC1)	Réglar de manière que la tension continue entre P204 et GND soit maximale.
2		1395		1395kHz	TC501	
3		Répète 1 et 2 ci-dessus.				
4	Réglage de IFT (Seuls les type HEWZI)	603	*	603kHz	F203	
5	Indicateurs de TUNED Niveau d'éclairement	999	55±5	999kHz	VR223	Le régler de manière que les indicateurs de TUNED commencent à s'allumer.

5. 2 RÉGLAGE DU SYNTONISEUR FM

- Placer le sélecteur BAND sur la position "FM".
- Régler le VCO après deux minutes(ou plus) de mise sous tension.

Note : Modulation stéréo : Principal 1kHz L + R±68,25Hz dév.
Pilote 19kHz± 6,75kHz dév.

Etape No.	Items de réglage	FM SG(1kHz±75kHz dév.)		Affichage de fréquence de réception	Réglage	
		Fréquence (MHz)	Niveau (dBμ)		Lieu de réglage	Caractéristiques
1	Réglage de la bobine de détection	98,0 (Sans modulation)	80	98,0MHz	L202	Réglar de manière que la tension continue entre P202 et P203 soit égale à ±50mV.
2	Réglage du VCO	98,0 (Sans modulation)	80	98,0MHz	VR230	Réglar de manière que la frequence entre P205 et GND soit égale à 76 ± 0,5 kHz.
3	Indicateurs de TUNED Niveau d'éclairement	98,0 (Sans modulation)	20±3	98,0MHz	VR222	Le régler de manière que les indicateurs de TUNED commencent à s'allumer.

5. AJUSTE

- Para las conexiones y puntos de ajuste, refiérase a la Fig. 5-1 y Fig 5-2.
- Donde un asterisco (*) represente el "nivel dBμ", ajuste al nivel (dBμ) en el que la tension sea aproximadamente la mitad de la tensión entre P204 y GND a 60 dB.

5. 1 AJUSTE DE LA SECCIÓN DEL SINTONIZADOR DE AM

- Ajuste el selector BAND a la posición "AM".

N°. de paso	Items de ajuste	AM SG(400Hz, 30% modulación)		Frecuencimetro de recepción	Ajuste	
		Frequencia (kHz)	Nivel (dBμ)		Lugar de ajuste	Especificaciones
1	Ajuste de alineación (Sólo los tipo HEWZI)	603	*	603kHz	Bobina de antena colectiva de MW (TC1)	Ajuste de manera que la tensión de CC entre P204 y GND sea la máxima.
2		1395		1395kHz	TC501	
3		Repita los pasos 1 y 2 arriba descritos				
4	Ajuste de IFT (Sólo los tipo HEWZI)	603	*	603kHz	F203	
5	Nivel de iluminación de TUNED	999	55±5	999kHz	VR223	Ajustelo de forma que los indecadores de TUNED comiencen a encenderase.

5. 2 AJUSTE DE LA SECCIÓN DEL SINTONIZADOR DE FM

- Ajuste el selector BAND a la posición "FM".
- Realice el ajuste VCO dos minutos o más después de conectar la alimentación.

Nota : Modulación estereo : Principal 1kHz L + R±68.25Hz dev.
Pilote 19kHz±6.75kHz dev.

N°. de paso	Items de ajuste	FM SG(1kHz±75kHz dev.)		Frecuencimetro de recepción	Ajuste	
		Frequencia (MHz)	Nivel (dBμ)		Lugar de ajuste	Especificaciones
1	Ajuste del medidor T de la bobina detectora	98.0 (Sin modulation)	80	98.0MHz	L202	Ajuste de manera que la tensión de CC entre P202 y P203 sea de ± 50mV.
2	Ajuste VCO	98.0 (Sin modulation)	80	98.0MHz	VR230	Ajuste de manera que la frequencia entre P205 y GND sea de 76 ± 0.5 kHz.
3	Nivel de iluminación de TUNED	98.0 (Sin modulation)	20±3	98.0MHz	VR222	Ajustelo de forma que los indecadores de TUNED comiencen a encenderase.

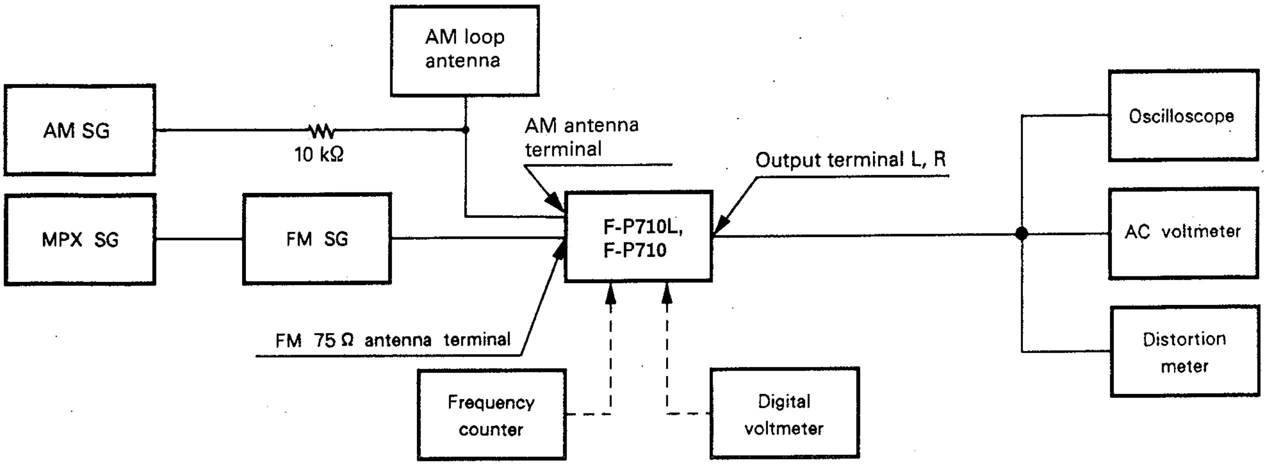


Fig. 5-1 AM and FM adjustment wiring diagram

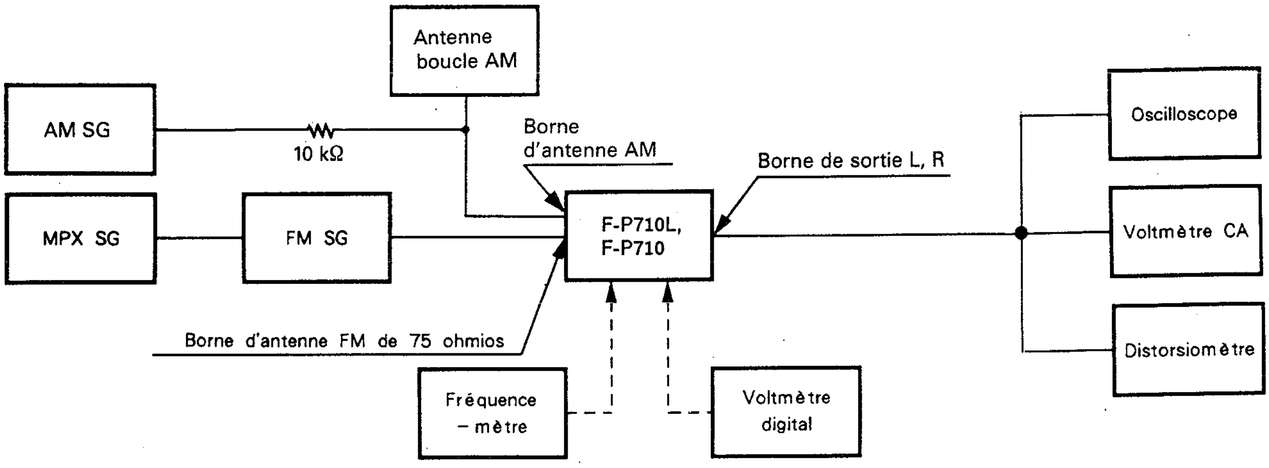


Fig. 5-1 Diagramme de càblage de réglage AM et FM

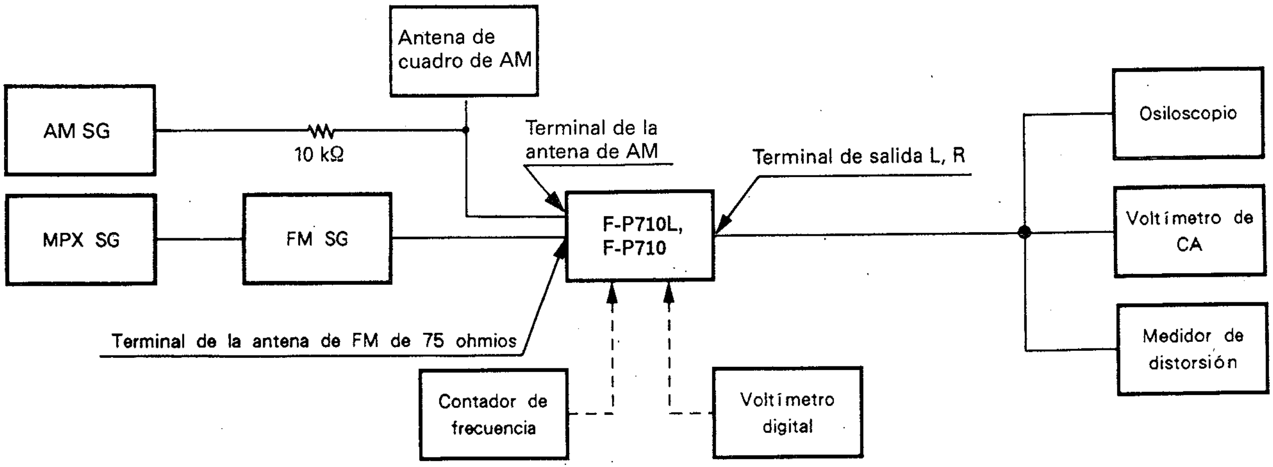


Fig. 5-1 Diagramma de conexión de ajuste de AM y FM

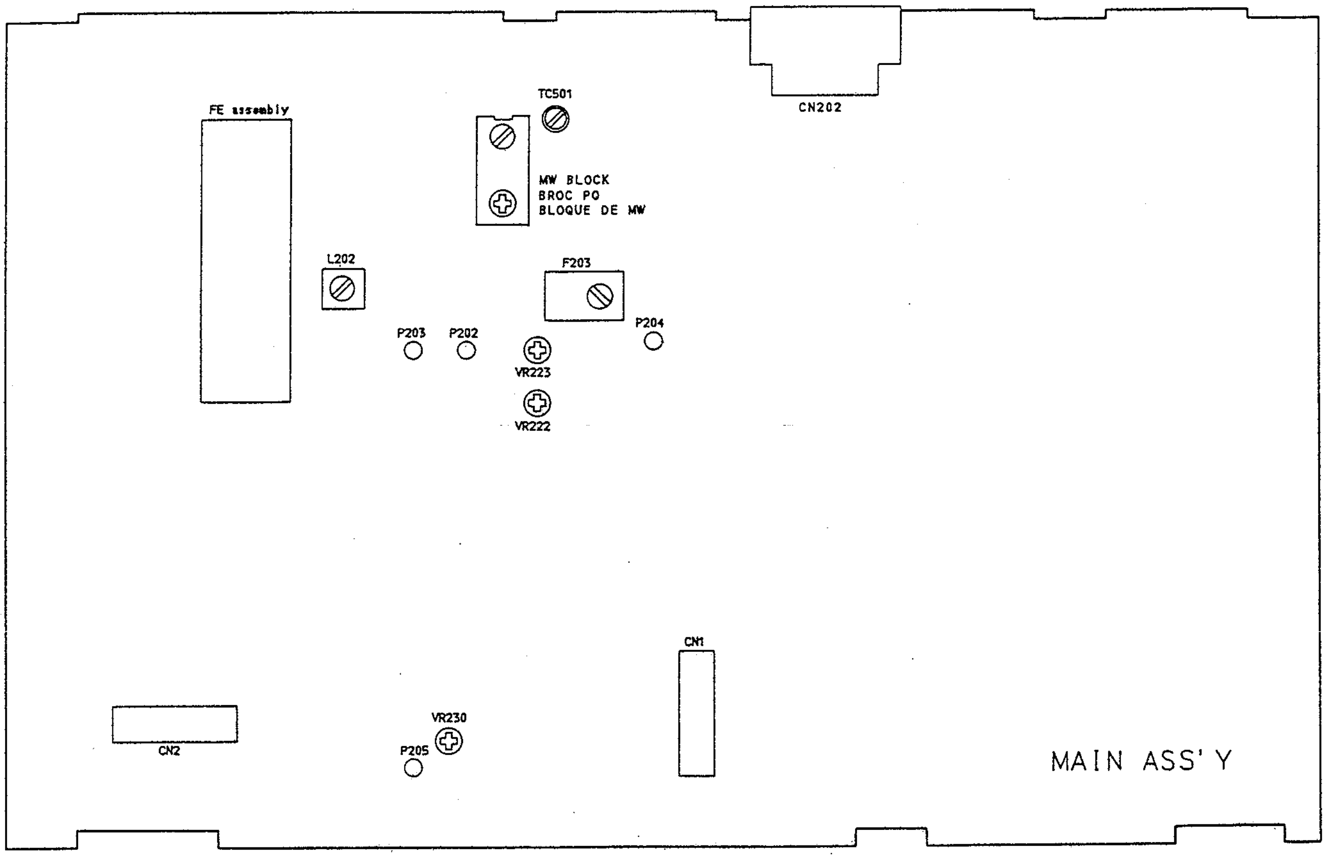


Fig. 5-2 Ajustment points
Fig. 5-2 Points de réglage
Fig. 5-2 Puntos de ajuste

6. FOR HB TYPE

NOTES :

- *Parts without part number cannot be supplied.*
- *Parts marked by "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*

• CONTRAST OF MISCELLANEOUS PARTS

The F-P710L/HB type is the same as the F-P710L/HE type with the exception of the following sections.

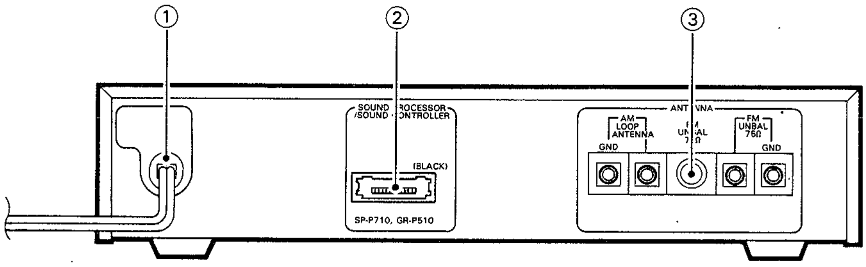
Mark	Symbol & Description	Part No.		Remarks
		F-P710L/HE	F-P710L/HB	
⚠	AC POWER CORD	ADG1068	ADG1067	
⚠	FUSE (FU1)	AEK-407	AEK-504	
	MAIN assembly	AWZ3413	AWZ3412	

MAIN ASSEMBLY (AWZ3412)

The main assembly (AWZ3412) is the same as the main assembly (AWZ3413) for the service supply parts.

7. PANEL FACILITIES

REAR PANEL FACILITIES

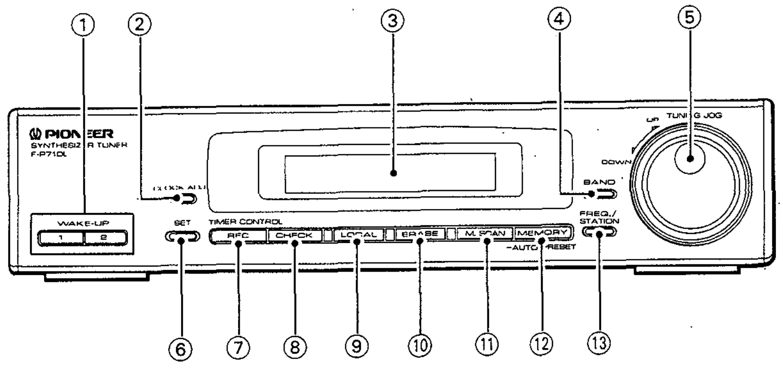


① **POWER cord**
Connect this to the amplifier's AC OUTLET.

② **SOUND PROCESSOR/SOUND CONTROLLER jack (black)**
Connect the SOUND FIELD PROCESSOR (or SOUND IMAGE CONTROLLER) system cable (black) here.

③ **FM/AM ANTENNA terminals**
Antennas must be connected to these terminals: otherwise station reception is not possible.

FRONT PANEL FACILITIES



① **WAKE-UP (1, 2) buttons**
Use for timer playback setting.

② **CLOCK ADJ button**
Used for starting the clock adjustment.

③ **Display section**

④ **BAND selector button**
Each time this button is pressed, the reception band is switched alternately between FM, MW (or LW) reception.

⑤ **TUNING JOG (UP — DOWN)**
[During tuning]
Used for tuning stations.
[During time and timer setting]
Used for adjusting the clock, timer settings and related adjustments.

⑥ **SET button**
Used for current time, timer playback, and timer recording settings.

⑦ **REC button**
Used for timer recording settings.

⑧ **CHECK button**
Used for confirming timer settings, after setting for timer playback or timer recording.

⑨ **LOCAL button (when receiving FM broadcasts)**
Use this button if the broadcast signal is too strong, causing noise and distortion. The attenuator reduces the strength of the signal, reducing noise and distortion.

⑩ **ERASE button**
Press to erase a station preset in the channel. If the button is held pressed for five seconds or more, all preset stations will be erased.

⑪ **M. SCAN button**
Press this button to scan the programs on the preset stations automatically for 7 seconds each. If you wish to continue listening to the station currently being scanned, press this button again to lock the tuning to the station. This will cancel the preset scan function and return you to normal reception.

⑫ **MEMORY button**
Press this button when you wish to preset a station frequency in the channel memory.

⑬ **FREQ./STATION button**
Press to switch between frequency and station modes.